



Energysaver FT3 range

Specification guide

Rinnai

Important

Rinnai is constantly improving its products, and as such, information and specifications are subject to change without notice. For the most up-to-date information, go to www.rinnai.co.nz.

Help is here

For more information about buying, using, servicing, and removing of Rinnai appliances call 0800 RINNAI (0800 746 624).

Rinnai New Zealand Limited
105 Pavilion Drive, Mangere, Auckland
PO Box 53177, Auckland Airport, Auckland 2150

Phone: 09 257 3800
Email: info@rinnai.co.nz
Web: www.rinnai.co.nz
www.youtube.com/rinnainz
www.facebook.com/rinnainz

Contents

Energysaver space heating range.....	4
Choosing the right Energysaver	5
Energysaver features	6
Energysaver specification summary.....	8
Dimensions (mm)	9
Energysaver flueing guidelines.....	10
Energysaver flueing options	11
Energysaver flue components	12

Appendices

Running costs.....	16
Clearances	18

Energysaver space heating range

Contemporary and powerful heating powered by gas. A heating solution that delivers excellent air quality and efficient heating to any room.

Energysaver FT3 range

The Energysaver FT3 models are the new range of power flued gas heaters being phased in over 2023 / 2024. They have the same great features as the FT range, the only differences are:

- Upgraded modern aesthetic with a darker top panel¹, common across all models
- Contrasting grey rear spacer panels
- Upgraded internal fan and additional blocked flue safety sensor

Energysaver features

- Delivers an ultra-clean breathing environment: Whether you're an allergy sufferer or not.
- Highly efficient: They provide heat through floor level outlets—whole areas are heated quickly.
- Child friendly: No exposed flame, cool to touch cabinet², and lock (child lock) as standard.

¹ Consolidation of the top panel across all models means the model name will disappear. This will only be accessible via the dataplate on the lower right hand side of the unit.

² Louvre component of the heater will still be hot.



Choosing the right Energysaver

Geographical location, room size, insulation, and running costs all play a part in choosing the right model.

Geographical location

Where you live in NZ can determine the type of heating solution you choose. Refer to the zoning map to work out which climate zone you are in.

Room size

Consider the total area that needs to be heated. This should include adjacent rooms through permanently open doorways and hallways.

Heat loss

Consider heat loss factors detailed below.

Running costs

Upfront purchase costs should be factored in conjunction with the ongoing running costs of a heating solution.

Size and shape

Additional considerations such as the size and shape of the heater, and where it can be installed (including flueing) needs to be factored.

Heater position

It's important to review the clearance and suitability information of each heater. This will provide information on where it can be installed.

HEATING AREA (up to, based on a standard ceiling height of 2.4 m)

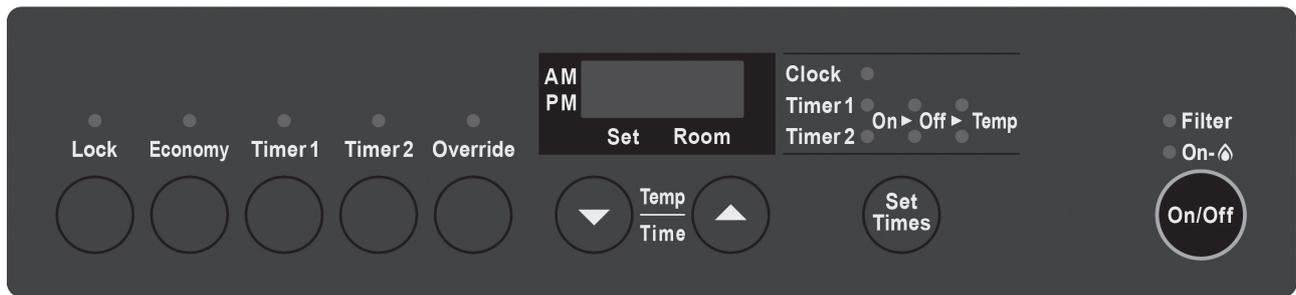
Energysaver	Warm zone	Mild zone	Cool zone
ES - 309FT3	49 m ²	34 m ²	29 m ²
ES - 561FT3	77 m ²	53 m ²	45 m ²
ES - 559FT3	84 m ²	58 m ²	49 m ²
ES - 1005FT3	140 m ²	97 m ²	82 m ²

As an estimate, make the following deductions from the heating areas shown for specific heat loss factors.

Heat loss factors:	Deduct heating area by:
• No ceiling insulation	10%
• Wooden floor (not concrete slab)	5%
• No carpets	5%
• No curtains on single glazed windows	5%
• As above, area exceeding 15 m ²	10%
• Ceiling height 2.5-2.8 m	3%
• Ceiling height 2.8-3.0 m	5%
• Ceiling height 3.0 m+	7%

For example: The 559FT3 will heat up to 84 m² (warm zone). If there is no ceiling insulation this area reduces by 10% to become 75.6 m².

Energysaver features



Features

Push button ignition	Only one-touch is required to turn the heater on and off.
Lock function	Prevents children from altering settings when the heater is in use or activating the heater when turned off.
Preheat	Automatically functions in conjunction with the timers. When a timer is selected, the heater may operate anywhere within an hour prior to the programmed on time. The preheat function ensures the room reaches the desired temperature by the programmed start time.
Economy	Energy saving feature designed to control the room temperature and prevent the room from overheating.
Override	Temporarily changes the heater operation from on to off, or off to on, until the next programmed setting is reached.
Timer 1 / Timer 2	Allows you to program the appliance to come on for two separate periods each day, in the morning and in the evening.
Filter indicator	When the filter becomes covered with dust the filter indicator will flash indicating that cleaning is necessary.
Humidifier tray	Raise humidity in the room for extra comfort with the humidifier tray—can be filled with water as required.

On/Off button

Main switch for turning the heater on and off. To turn on, press the ON/OFF button, the heater will glow green, the spark generator will be heard before the burner ignites and the indicator will glow red. When the heater warms up the fan will start.

To turn the heater off, press the ON/OFF button, the indicator light will go out. The fan will continue to operate for a short time to cool the appliance.

Set times

Selects clock, timers, or temperatures for adjustment or programming.

Temp and time

Increases or decreases the temperature as well as changing the hours or minutes when in programming mode.

Energysaver

product specification pages



Energysaver specification summary



Description

Designed and made in Japan, Rinnai Energysavers are externally flued gas appliances designed to be installed against a wall. They are intended for installation in living spaces and open plan areas.

Colour - white with grey louvres.

Scope of use

Ideal for living rooms, bedrooms, and open plan areas as space heaters. Versatile power flue system makes for easy installation in almost any living space. The larger 1005FT/FT3 is designed for commercial applications in large open plan areas such as churches, community halls, and large classrooms.

Energysavers must not be built in, for example into a bookcase or into walls.

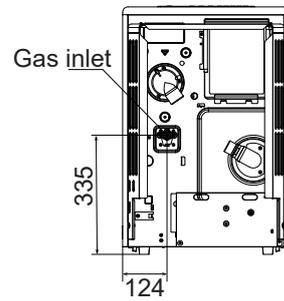
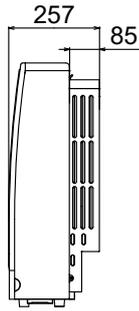
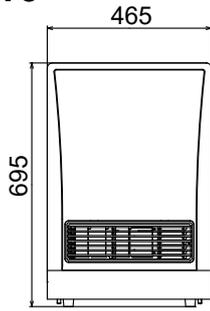
	309FT3	561FT3	559FT3	1005FT3
				no image
Order codes - NG	RHF309FT3WN	RHF561FT3WN	RHF559FT3WN	RHF1005FT3WN
Order codes - LPG	RHF309FT3WL	RHF561FT3WL	RHF559FT3WL	RHF1005FT3WL
Efficiency¹	84.6%	82.9%	82.8%	83.4%
Input¹	5.8-13 MJ/h	9-23 MJ/h	9-23 MJ/h	15.5-37 MJ/h
Output¹	1.3-3.2 kW	2.2-5.3 kW	2.2-5.3 kW	3.5-8.9 kW
Humidifier tray capacity	0.8 L	1.0 L	1.0 L	3.0 L
Noise level	31-38 dB(A)	34-42 dB(A)	33-42 dB(A)	39-45 dB(A)
Power consumption	Approx. 24 W (high) <1 W on standby	Approx. 36 W (high) <1 W on standby	Approx. 30 W (high) <1 W on standby	Approx. 59 W (high) <1 W on standby
Temperature range	16-26 °C	16-26 °C	16-26 °C	16-26 °C
Gas connection	15 mm BSP male thread	15 mm BSP male thread	15 mm BSP male thread	15 mm BSP male thread
Injectors NG	2 x Ø1.25 mm	4 x Ø1.25 mm	4 x Ø1.25 mm	4 x Ø1.50 mm 1 x Ø0.45 mm
Injectors ULPG	2 x Ø0.85 mm	4 x Ø0.82 mm	4 x Ø0.82 mm	4 x Ø1.00 mm 1 x Ø0.30 mm
Data plate position	Lower RHS	Lower RHS	Lower RHS	Lower RHS
Weight	19 kg	23 kg	24 kg	40 kg
Features	Preheat, dual timers, manual control, electronic ignition, economy, fan filter, overheat safety device, lock			

¹ Input, output, and efficiency will vary depending on gas type and flue length

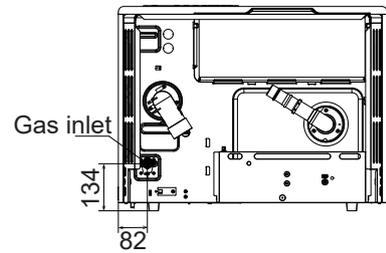
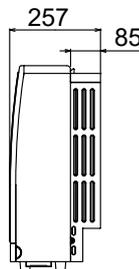
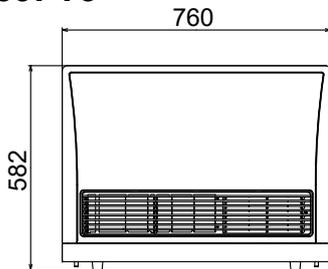
For gas pressures and gas type, refer to the data plate on the lower right hand side of the unit

Dimensions (mm)

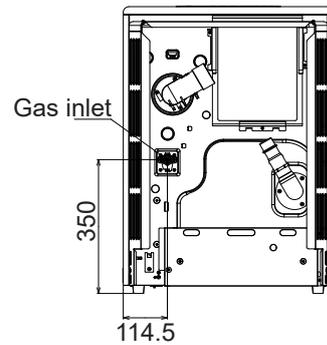
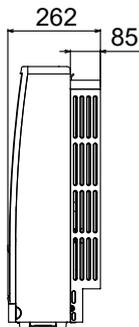
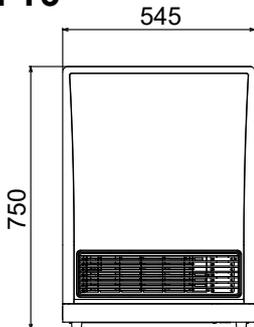
309FT3



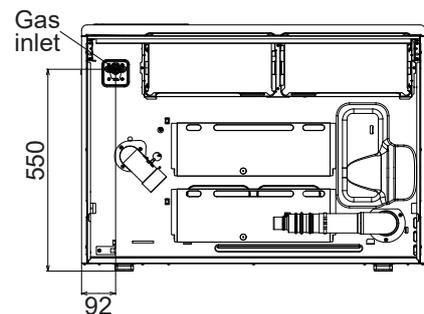
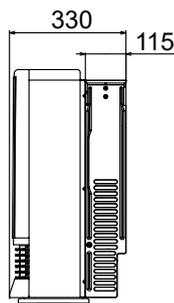
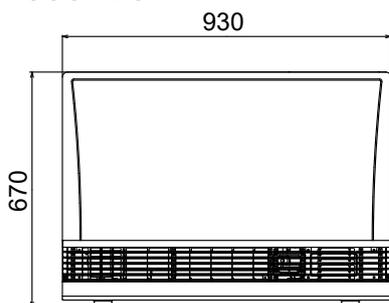
559FT3



561FT3



1005FT3



Energysaver flueing guidelines

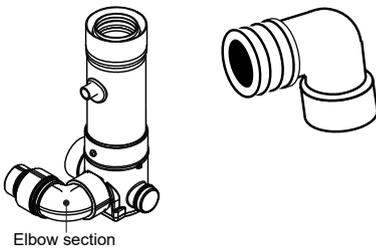
Every Energysaver heater requires a flue system that will draw effectively and clear products safely under all potential wind and climatic conditions. It is the responsibility of the installer to ensure that the appliance is provided with an effective flue. Some guidelines to assist with flue design are in this guide. These must be read and modified as necessary with reference to the particular installation.

All Rinnai Energysavers must be installed with an approved Rinnai flue system.

Flue clearance to combustibles

Energysaver flue components, except the elbow section of the ESKIT03 / ESELBOWB, have zero clearance.

The ESKIT03 / ESELBOWB require a minimum clearance of 25 mm from combustible materials.



Condensate trap

A condensate trap is required for all vertical installations to ensure condensate generated during combustion is trapped and prevented from entering the chamber of the heater.

2° fall to wall terminal

For direct, sideways, and down-and-out installations there must be a continuous fall of 2° to the wall terminal (equates to 20 mm per metre). The Energysaver A/AA direct mushroom flues have an inbuilt 2° fall, and the wall plate of the ESDFK kit has a 2° offset.

Flue terminal locations

Must be compliant with AS/NZS 5601.1:2013.

- Do not flue into natural draft flues or fireplaces
- Do not flue into other rooms, roof spaces, or under floor spaces

The flue terminal must be positioned away from flammable materials.

Keep snow and other items, such as outdoor furniture well clear of the flue terminal at all times.

Flashings

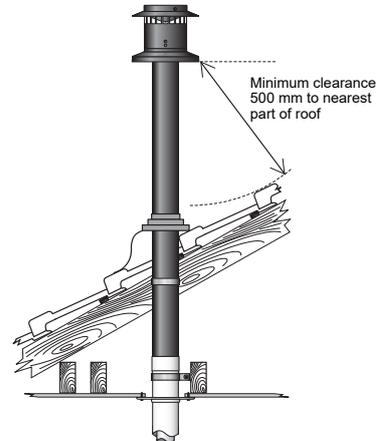
Flashings are not part of the flue kit and must be specified.

Vertical flue cowl clearance

To ensure products of combustion are cleared, adequate clearance from the building is required.

The flue cowl should have a 500 mm clearance from any part of the building. This also applies to steeped and pitched roofs where the flue cowl should be 500 mm clear of the ridge line.

An adequate flow of fresh air must exist around the flue cowl following installation. Minimum clearances are shown in AS/NZS 5601.1:2013.



Maximum flue length and number of bends

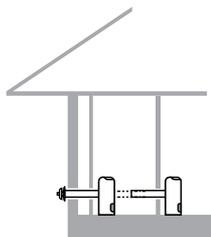
Maximum flue length	= 9 m
Maximum number of bends	= 3
One 90° bend	= 1 m.

For every 90° bend the overall length must be reduced by 1 m. For example, if an installation has three 90° bends, the maximum flue length can be 6 m.

The flue transition connection for the ESKIT03 / ESELBOWB is counted as a 90° bend.

Energysaver flueing options (most common)

Direct and direct extended flueing



Direct through the wall flueing for walls 75-385 mm thick.

Flue can be extended if wall thickness is greater than 385 mm using the ESDFK and additional lengths of flue pipe ESPIPE900.

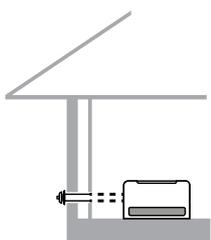
Direct

R1350: Mushroom flue kit for walls 75-115 mm
R1351: Mushroom flue kit for walls 115-240 mm
ESDFK¹: Straight horiz. kit for walls up to 385 mm

Direct extended

ESDFK¹ + ESPIPE900²

Sideways extension flueing



Flue runs along the left or right hand side of an internal wall behind the unit.

If retrofitting the flue can be boxed in along the floor or behind a 125 mm false wall. The installation requires additional clearance off the wall, a back spacer kit is required.

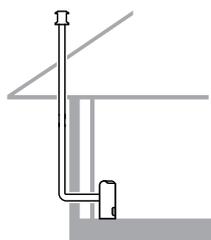
Sideways in-wall

ESDFK¹ + ESELBOWB + ESPIPE900²

Sideways front-of-wall

Back spacer kit + ESDFK¹ + ESPIPE900²

Vertical extension through-wall flueing

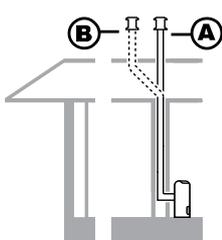


Flue runs directly from the unit to a vertical termination on the roof.

Examples for this option would be an Energysaver installed against a solid brick wall or where there are flue clearance restrictions.

ESDFK + ESBEND³ + ESPIPE900² + ESCONDK + ESROOFCOWL

Vertical extension in-wall flueing



Flue is installed within a stud wall, minimum cavity depth 90 mm, and is run vertically. This type of installation is usually completed at the framing stage.

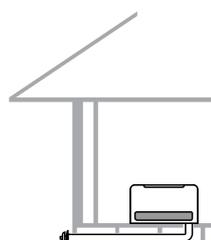
A - Direct

ESKIT03 + ESPIPE900² + ESROOFCOWL

B - Offset

ESKIT03 + ESPIPE900² + ESBEND³ x 2 + ESROOFCOWL

Down and out flueing



Flue runs below the floor to an external termination—must have a continuous fall of 2° to the termination point to drain condensate. Ideal for Energysavers that need to be located in a central position of a building.

If not going in-wall the flue will require additional clearance off the wall—a back spacer kit required.

Down and out

Back spacer kit + ESDFK¹ + ESPIPE900² + ESBEND³

Down and out in-wall

ESELBOWB + ESDFK¹ + ESBEND³ + ESPIPE900²

Down and out through-wall⁴

ESDFK¹ + ESBEND³ x 2 + ESPIPE900²

¹ Use terminal off ESDFK on outside wall

² ESPIPE900, order lengths as required

³ ESBEND kit contains 2 x 45° bends

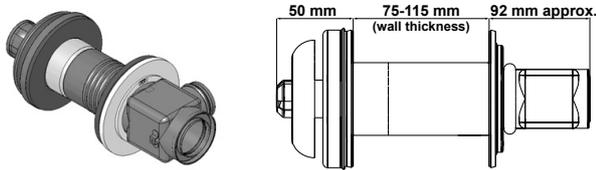
⁴ Installation that goes out into another room then down and out

Energysaver flue components

Direct AA mushroom flue kit (R1350)

Construction - stainless steel

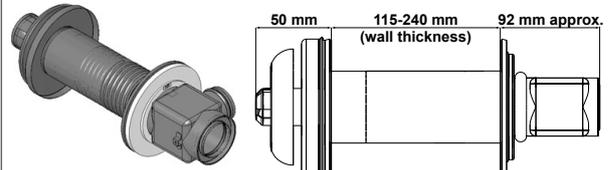
For use in walls 75-115 mm thick. This is a complete kit with an inbuilt 2° fall to drain condensate, no other components are required.



Direct A mushroom flue kit (R1351)

Construction - stainless steel

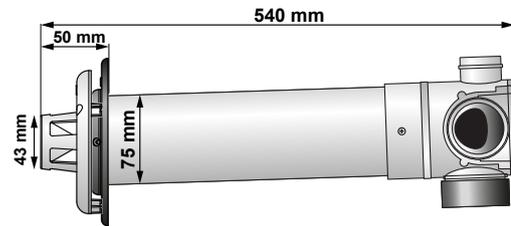
For use in walls 115-240 mm thick. This is a complete kit with an inbuilt 2° fall to drain condensate, no other components are required.



Direct flue kit (ESDFK)

Construction - aluminium

Suitable for walls up to 385 mm—can be cut to size. Used in combination with ESPIPE900 for longer flueing.



Coaxial flue pipe (ESPIPE900)

Inner construction - aluminium

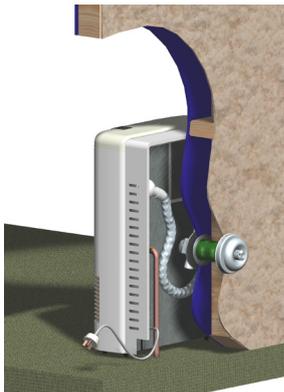
Outer construction - PVC plastic

Extension pipe (960 mm installed), used to construct horizontal, vertical, and down-and-out flueing—can be cut to size. Comes with one wall bracket (not pictured). Additional parts that may be ordered separately:

- O-ring for pipe (4350)
- Spacer for pipe (4351)



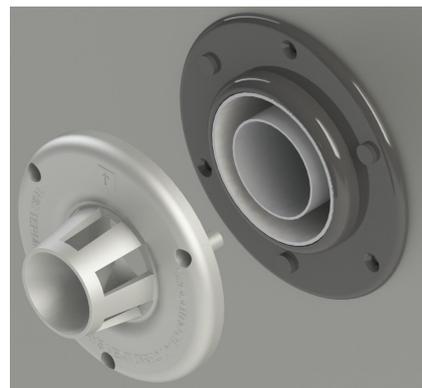
Installation using a direct mushroom flue kit



Mushroom flue terminal on a brick wall



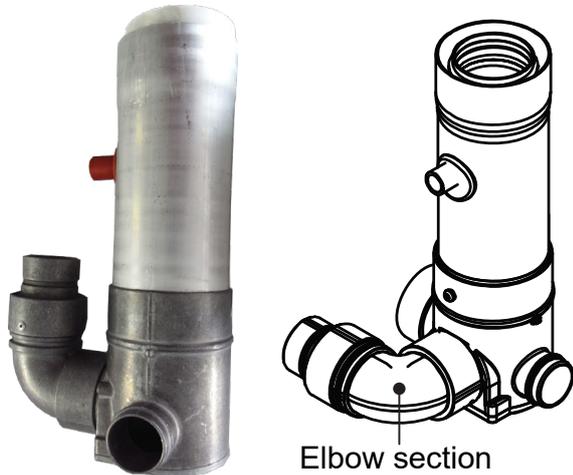
Flue terminal of the direct ESDFK flue kit



In-wall flue adaptor kit (ESKIT03)

In-wall transition flue kit. Elbow section of this kit requires a 25 mm clearance from combustibles, the rest is zero clearance. Elbow swivels.

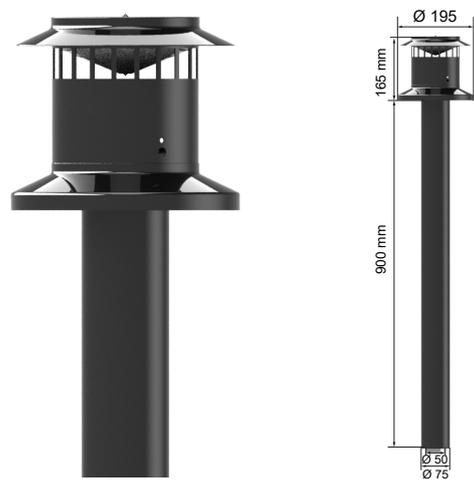
Includes; condensate trap, top plate, wall spacer plate, and vermin plates (not pictured).



Vertical terminal (ESROOFCOWL)

Roof cowl and connecting pipe (960 mm installed) for termination of flue in vertical terminations—can be cut to size. Flashings are not part of the kit and must be specified.

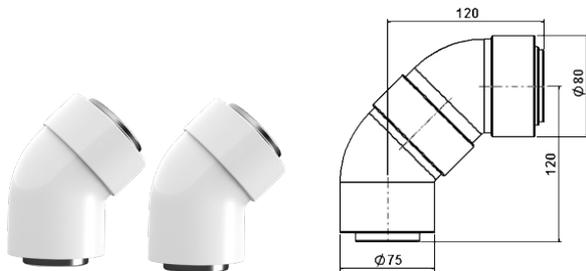
Construction - black powder coating galvanised steel.



45° flue bends x 2 (ESBEND)

Used to facilitate between horizontal, vertical, and down-and-out flueing. Two spacers are included.

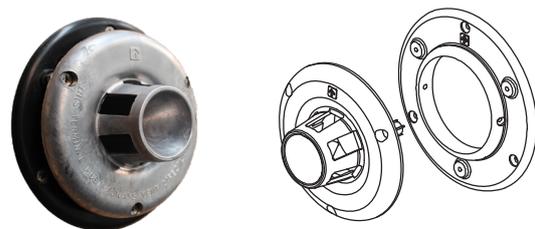
Bends can be used separately or together as one 90° bend.



Horizontal wall terminal (ESWTERM)

Used to terminate the flue pipe (ESPIPE900) in horizontal flue installations when used in conjunction with the in-wall flue adaptor (ESKIT03), refer vertical in-wall horizontal image on p.11.

Contains the aluminium flue terminal and the black PVC external wall plate.



Wall plate (ESPLATE)

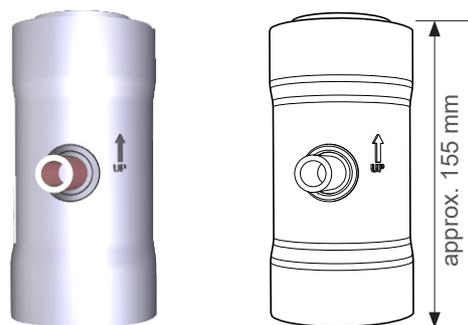
Used if an extra wall cover is required to tidy any installation work through the wall, ceiling, or floor.

Outer diameter - 170 mm



Condensate trap (ESCONDK)

Only ordered separately for horizontal through-wall vertical flueing, refer image on p.11. Supplied with a 750 mm drain tube (not pictured). When installed the arrow MUST point up. Construction - aluminium.



Energysaver flue components cont.

Aluminium elbow adaptor (ESELBOWB)

For horizontal, and down-and-out installations that are recessed into a wall and DO NOT require a back spacer kit.

Requires a minimum clearance of 25 mm from combustible materials.

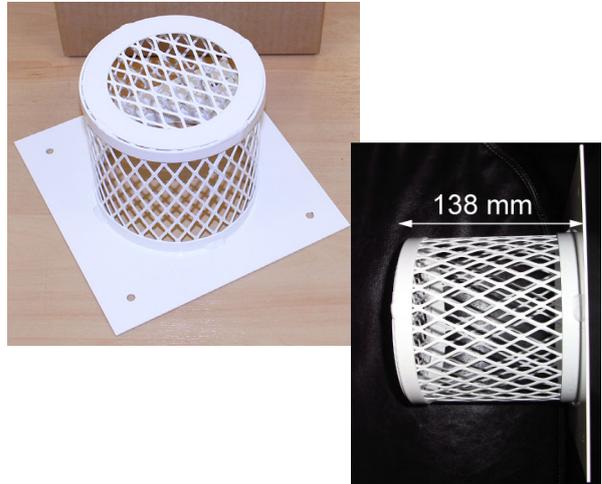


Steel flue guard (R1370)

Protection against hot flue gases when the termination is low to the ground.

Colour - warm white

Dimensions - 220 x 220 mm, diameter 146 mm



Back spacer kits

309FT3	559FT3	561FT3	1005FT3
ESBSKE	ESBSKF	ESBSKG	ESKBSKH

The back spacer kit covers the flue elbow connection and provides the required clearance from the heater and wall in down-and-out flueing, and sideways front-of-wall flueing.

The back spacer kit is used INSTEAD of the standard rear panels supplied with each Energysaver and adds approximately 115 mm of additional depth. The standard rear panel is 85 mm, the back spacer kit is 200 mm, refer images below.

The back spacer kit contains:

- Left, right, and top spacer panels
- Flue elbow connection (as pictured above)
- Plastic edging seal



559FT3 with standard rear panels



559FT3 with back spacer kit

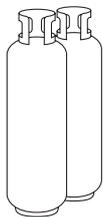
Appendices



Running costs

Cost assumptions and calculations

45 kg LPG gas bottle energy calculation



1 kg of LPG gas contains 50.4 MJ of energy
1 kW = 3.6 MJ

This means that a 45 kg LPG bottle has approximately 2268 MJ (45 kg x 50.4 MJ)

Natural Gas: Calculating your own running costs

- 1 Calculate the MJ input of the appliance to kW, for example 15 MJ/h = 4.17 kW/h
- 2 Calculate the approximate running cost per hour, for example $\$0.1441 \times 4.17 \text{ kW/h} = \$0.60/\text{hr}$

LPG: Calculating your own running costs

- 1 Calculate the cost of gas per MJ/h, for example; $\$115 \div 2268 \text{ MJ} = \0.051 per MJ/h
- 2 Calculate the approximate running cost per hour, for example $\$0.051 \times 15 \text{ MJ/h} = \$0.76/\text{hr}$

LPG and Natural Gas costs

Natural gas

It's become a competitive market out there and we're noticing that plans and pricing are more difficult to access without actually switching providers. Natural Gas costs are based on the latest MBIE¹ natural gas residential cost as at 2021, which includes GST and a daily fixed line charge. It doesn't include any prompt payment discount.

- MBIE residential - 0.1441 cents/kWh

¹ www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/energy-prices/

LPG (as at May 2022)

To fill a 45 kg gas bottle we found the below numbers, we have averaged this at \$109 and used this number to calculate running costs.

- frank energy - \$104 Dual Fuel Plan or \$120 Single Fuel Plan
- Vector Ogas - \$110.46 (range on website \$110.46-\$180.82)
- Trustpower - \$102

Above figures exclude LPG bottle rental.

The cost of LPG and Natural Gas will differ in each area, please check with your local supplier. The cost of the cylinder rental, line charges and other variables are not included in the running costs.

Running costs

Based on the information below, calculate for yourself the approximate running cost of a Rinnai Energysaver, and if you're using LPG bottles, calculate the approximate hours a 45 kg bottle will last.

Hourly running costs

Model	Heating area	LPG running costs per hr.		NG running costs per hr.	
		on low	on high	on low	on high
309FT3	29-49 m ²	\$0.30	\$0.66	\$0.23	\$0.52
561FT3	45-77 m ²	\$0.46	\$1.17	\$0.36	\$0.92
559FT3	49-84 m ²	\$0.46	\$1.17	\$0.36	\$0.92
1005FT3	82-140 m ²	\$0.79	\$1.89	\$0.61	\$1.45

45 kg LPG bottle and weekly running costs

Model	Gas input				45 kg bottle will last (hours)		Weekly running costs (\$)			
	Low		High				LPG		Natural Gas	
	MJ/h	kW	MJ/h	kW	Low	High	Low	High	Low	High
309FT3	5.8	1.61	13	3.61	391	175	\$10.50	\$23.10	\$8.05	\$18.2
561FT3	9.0	2.50	23	6.39	252	97	\$16.10	\$40.95	\$12.60	\$32.20
559FT3	9.0	2.50	23	6.39	252	97	\$16.10	\$40.95	\$12.60	\$32.20
1005FT3	15.5	4.31	37	10.28	146	62	\$27.65	\$66.15	\$21.35	\$50.75

This table is meant as a guide only. Please refer to the notes regarding running cost assumptions and how values have been calculated on the previous page. Always double check figures based on your own use.

The weekly running costs are calculated based on the heater, during cooler months, operating two hours in the morning and three hours in the evening—a total of five hours use each day.

Please note

All Rinnai Energysavers require electricity to run—electricity costs have not been factored into the running costs.

The 45 kg LPG bottle hours do not include running times of other gas appliances in use, for example a gas water heater or a gas hob.

Clearances

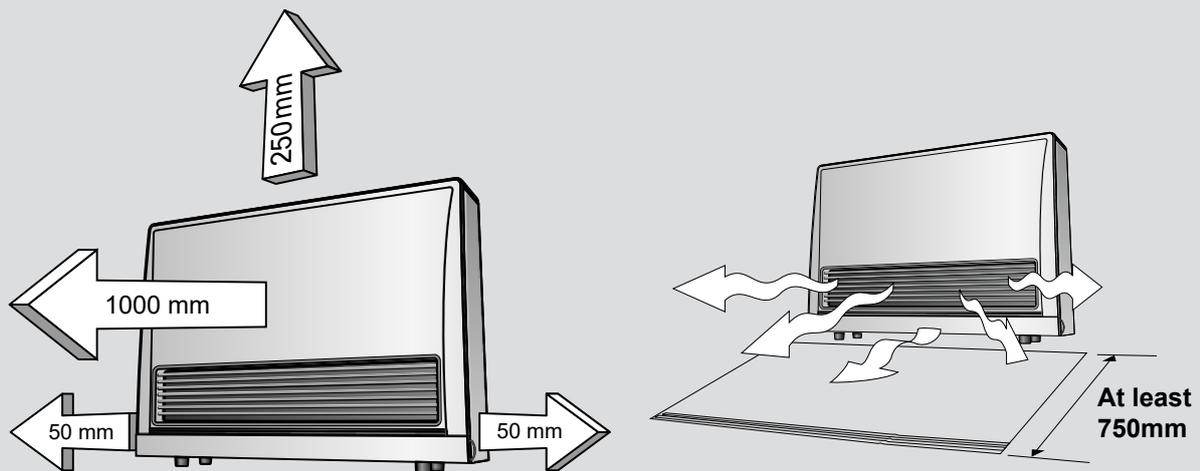
This appliance must not be installed where curtains or other combustible materials could come into contact with it. In some cases curtains may need restraining.

- Not intended as a fireplace insert, DO NOT build into bookcases or walls etc.



The heater must not be located immediately below a power point.

The clearances shown, while the heater is operating, must be maintained.



Floor protection

Energysavers discharge a large volume of warm air at a low level. Heat over time may affect the appearance of some flooring materials, such as, carpet, vinyl, cork, or timber. To avoid this occurring, it is recommended that a mat be placed in front of the appliance.

Rinnai.co.nz

Tel: 0800 746 624

<http://www.youtube.com/rinnainz>

<http://facebook.com/rinnainz>